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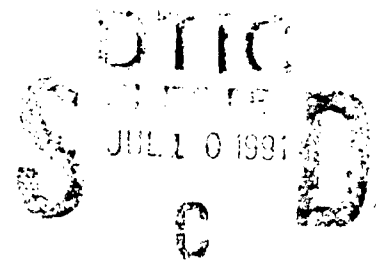
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SUFFIELD SPECIAL PUBLICATION NO. 143



**AUTOMATING A GOVERNMENT RESEARCH LIBRARY:  
THE FIRST YEAR'S PROGRESS REPORT ON THE  
DEFENCE RESEARCH ESTABLISHMENT SUFFIELD'S  
PROJECT CLIO**

J.G. Currie

May 1991

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### **ABSTRACT**

PROJECT CLIO is a special project at the Defence Research Establishment Suffield (DRES). The four original objectives of the project were: to automate the DRES library collection of books, documents and journals; to conduct a security classification/ Access To Information (ATI) review of all documents published at DRES since 1941; to weed the document collection and to redesign and rearrange library facilities; and to provide expert and analytical advice to DRES management on matters of information security and dissemination, ATI, and theoretical and operational aspects of information science. Duties added to the project during the first year included the CW History project and a revised publicity brochure. This paper reports the accomplishments of 1990 and describes the actions taken to achieve specific goals. Included as annexes are three of the automation planning papers and a list of publications related to the project.

### **RÉSUMÉ**

CLIO est un projet spécial du Centre de recherches pour la défense Suffield. Les quatre objectifs initiaux du projet étaient les suivants: automatiser le système bibliothécaire de la collection de livres, de documents et de périodiques du CRDS; faire une révision de la classification de sécurité et de l'accès à l'information de tous les documents publiés par le CRDS depuis 1941; trier les documents de la collection et jeter ceux qui sont caduques, et refaire l'aménagement de la bibliothèque; donner à la direction du CRDS des avis spécialisés et analytiques en matière de sécurité et de diffusion de l'information, d'accès à l'information, ainsi que sur certains aspects théoriques et fonctionnels des sciences de l'information. Les tâches suivantes ont été ajoutées au mandat du projet au cours de sa première année d'activité: faire un historique de la guerre chimique et refaire la brochure publicitaire. Le présent document donne un compte rendu des réalisations de 1990 et décrit quelles actions ont été prises pour atteindre les objectifs visés. Vous trouverez en Appendice trois des documents de planification sur l'automatisation et une liste de publications pertinentes au projet.

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## **EXECUTIVE SUMMARY**

PROJECT CLIO is a special project at the Defence Research Establishment Suffield (DRES). DRES was established in 1941 as a research, test and development centre. Over the half century of existence it acquired many reports in its library collection. It was also used to safeguard material from other establishments. The first instance of this was when the British Chemical Defence Establishment (CDE) Porton Down, transferred copies of their entire report collection to DRES in 1941 or 1942 either to assist in the research at DRES or more probably as an insurance policy in case Britain was conquered by Nazi Germany. Material from other establishments soon followed. The library collection contained over 37,000 catalogued items and perhaps twice as many duplicates. Material stored in a remote vault was completely unaccessible. Some of the material was still in the original shipping containers. No effort had been made to sort or index the material or even to determine what was a duplicate. The only method of locating an item was to physically examine each item. Due to this poor organization it was very difficult to estimate the amount of material in storage but a projection based on the number of shelves and the average number of items per shelf suggested it could be no less than 50,000 and perhaps as many as 100,000 items. DRES also published over 5,000 reports during this time period all of which have the potential to be requested under Access To Information (ATI) legislation.

To overcome these shortcomings it was decided to institute Project CLIO with the following objectives:

- a. automate the DRES library collection of books, documents and journals;
- b. conduct a security classification/ Access to Information review of all documents published at DRES since 1941;
- c. weed the document collection and to redesign and rearrange library facilities. Weeding in this case means the removal of superseded or irrelevant material from the collection and removing records of said material from the library finding aids, specifically the catalogue.

Another duty was to function as the Information Staff Officer for the Director/Program Support Division. This position had three broad objectives: to be the in-house expert on matters of document classification, security, distribution and Access To Information;

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to advise and work with both the Director and Head/Information Services on the theoretical and operational aspects of information services; and to undertake specific tasks as required.

Duties added to the project during the first year included the CW History project and preparation of a revised publicity brochure.

Two contracts were completed in 1990, the evaluation of candidate library systems and the purchasing, customizing and installation of the system. The third contract, for implementing the system was begun in late 1990 and is ongoing.

Cataloguing standards were formulated and the new style records were tested to ensure that all requirements for searching and retrieving the information were met. These standards were then incorporated into a cataloguing manual. Authority search terms were devised, for example the 9 designations for Mustard Gas in the DRES card catalogue were linked so that searching for one would locate references to all 9. Over 2,800 records were put into the system using the new standards.

In access of 51,000 individual documents making up some 37,000 separate titles were reviewed during the weeding phase and 29,000 titles making up 42,000 documents were removed from the collection. Over 2,800 documents were returned to DSIS for safekeeping and 40,000 were destroyed in accordance with National Defence Security Orders.

The journal collection which had been boxed and held in remote storage, some for as long as 5 years, was sorted and shelved in the 2 new journal storage areas. Journals that were weeded from the collection were shipped to the Canadian Book Exchange in Ottawa.

A complete series of DRES publications, 1067 items, underwent a classification/ATI review and 236 items were reclassified.

The material that was to be retained at DRES was rearranged in the main vault. All DRES corporate documents were grouped together for easy access.

Staff duties included: reviewing the annual report; acting as an advisor and deputy chairman of the Document Review Panel; preparing specialized bibliographies for cooperative international bodies; preparing a 5 year annotated publications list for the Biological, Chemical Defence Review Committee, an independent body reporting to the Minister of National Defence; assisting in the restructuring of the information services finances; revising the publication procedures; and providing assistance to specialized on-site contractors.

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A firm estimate on the length of time required to complete the project can now be made. It is recommended that the project be extended from 2 January 1992 to 31 December 1993 and that contract W7702 90-0902 for data entry be extended for the same period.

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INTRODUCTION

The Defence Research Establishment Suffield (DRES) has been actively examining the automation of information services since 1985. A series of feasibility studies and position papers were written by J G Currie between 1985 and 1988. In 1989 DRES management agreed to Mr Currie's proposal that he be assigned to a special project that dealt not only with automation but with other matters related to information. As the project had a historic bent it was named CLIO in honour of the muse of history.

HISTORY

For various reasons DRES has long been a recipient of material that other establishments no longer were able or wanted to hold. This began when DRES was first opened in 1941 when the British stored copies of all their Chemical Defence Establishment Porton publications. This was followed by material from the Chemical Warfare Laboratory, the Director of Chemical Warfare and Smoke, and in later years, by material from the Defence Research Chemical Laboratory. This process was formalized sometime in late 1954. A letter from the Chief Superintendent of Suffield Experimental Station to DSIS confirms the suggestion of the Vice Chairman/Defence Research Board that a mustard vault on the prairie could be modified as a "place for storing dead files and holdings of DSIS". The letter went on to say "[n]o consideration has been given to the installation of shelving since it is assumed that documents and/or records would be shipped in standard size cartons which could be stacked without shelving."<sup>1</sup> This shows a certain contempt for the value of the material. Thousands of documents and files, the earliest dated 1915, were shipped to DRES over the next 15 years and no attempt was made to inventory or to make order of them nor were they even removed from their original shipping containers.

At the same time DRES received over 2,000 documents annually either in support of the research project or on automatic distribution. Most of these items were catalogued and added to the collection. The catalogue for the documents alone took up 220 card drawers, some of which were so tightly packed that the cards could not be looked at without removing a block of them from the drawer. Many cards and subject headings were irrelevant to the DRES users. What may have been common knowledge in the 1950's was a puzzle in 1990. Many of the documents were irrelevant as well, the

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<sup>1</sup> Letter, Langstroth to Chairman/DRB, 2 Nov 1954. DRES file SES 1-7-2-5/97 (M11554).



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information having been superseded or referring to research programs in which DRES was no longer involved. This sort of material is collectively referred to as "noise" in library literature as it hampers the user from locating those items which are current and relevant.

The material that had been placed in Building 12 in the distant past was completely inaccessible as there was no record of what was stored there. Both the vault in the Central Lab and the vault in Building 12 were filled to capacity.

THE PROJECT

The project officially began on 2 January 1990.

The project started out as four tasks:

- a. the automation of the library collections;
- b. the review of all corporate documents for the purpose of classification review and releasability under Access To Information (ATI);
- c. the review of all documents files and miscellaneous items held in two vaults for the purpose of retention or destruction (weeding) and the rearrangement of library storage facilities; and
- d. to act as Information Staff Officer for the Director/Program Support Division (D/PSD) and to provide expert advice to both D/PSD and the Head/Information Services (H/ISG) on matters of information security and dissemination, ATI, ministerial inquiries and questions raised in the House of Commons and the theoretical and operational aspects of information services.

The project grew as more duties and tasks were added including the Chemical History and Publicity Brochure projects. The Project Manager monitored, provided advice on, and recommended the acceptance of the series of contract reports that Dr R B Harvey submitted and liaised with and provided close support to contractors from the Defence Sciences Division.

While not necessarily under the supervision of the Project Manager the following all contributed to the project in 1990:

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## DRES

Ms A M Dickason  
Mrs I Scrivener  
Mr B Diakow  
Mr J Kadezabec  
Mrs J Hodges

Head/Information Services  
Library Technician  
Summer Student  
Summer Student  
Analyst, Computer Group

## Other

Mr I Cordes  
Ms A Jones

SHL Systemhouse Calgary  
SHL Systemhouse on-site

AUTOMATION

The first aspect of automation dealt with identifying the system requirements and selecting the system. Much of the preliminary work had previously been done at DRES and the Statement of Requirements (SOR) was finalized in October 1989. The SOR is contained in Annex A. Contract W7702 89-1310 was let to SHL Systemhouse in November 1989. The contractor was to develop a requirements definition and perform an analysis and software evaluation for the Master Bibliographic File and catalogue named LOLA (Locating Library Articles). The contractor was to deliver the following reports:

- a. Requirements Report,
- b. Functional Specifications Report,
- c. Software Evaluation Report, and
- d. Implementation Plan.

The Project Manager and Mr Cordes worked very closely from December 1989 to April 1990 assisted by both Ms Dickason and Mrs Hodges. The requirements and specifications were agreed to and Requests For Information (RFI) were sent out to approximately 20 suppliers who met the requirements. In order to ensure that the systems met DRES needs a set of selection criteria was designed and assigned numerical weights. Many of the criteria stressed the fact that the system had to be user friendly, utilitarian and adaptable to DRES needs. The list of criteria is included in Annex B. Seven systems were evaluated and four met the selection criteria. Demonstration packages or vendor displays were obtained. DRES directed that Systemhouse create a test database containing the records of 538 documents and 446 books actually in the DRES system. The database was loaded and tested by the Project Manager and Ms Dickason on 25-26 April 1990.

The Project Manager conditionally approved the selection of ELOQUENT System's The Eloquent Librarian. ELOQUENT provided its software to DRES for performance testing by the CLIC team. Mr

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Cordes loaded the system into the Project Manager's PC and Mr Currie, Ms Dickason and Ms Jones continued to field test the system. Many potential problems or desired changes were identified and made during this test period.

SHL Systemhouse submitted the final report<sup>2</sup> in June 1990 and the report was accepted as fulfilment of contract W7702 89-1310. Phase I had been completed.

Phase II of LOLA was divided into two separate contracts: W7702 90-0801 was the implementation of both the hardware and software and W7702 90-0802 was the conversion of the library records and their entry into the database. Both contracts began in August 1990. The implementation was entirely the responsibility of SHL Systemhouse. The statement of work was to acquire, customize and install the required software modules and attendant hardware. This included the purchase of the base system, local area network, configuration training and support contract all from ELOQUENT; the purchase, installation configuration and testing of a 386/25 MHz Fileserver with 300 MB Disc and 4 MB RAM, Etherlink II, a Wang Tek/300 tape backup, Novell Advanced Netware, a battery backup and a 36 month warranty; and to customize the Master Bibliographic File, the search linkages, the Authority tables, the Thesaurus tables, the Stopword table, and the reports function; and to provide all documentation for the customization as well as to train DRES staff in the system. The Master Bibliographic File was customized so that it could include all the information required for the DRES catalogue. This information is listed in Table I.

This contract was completed at the end of October 1990.

The conversion contract, which will continue until December 1991, is basically to enter data into LOLA.

Over the course of the development of this system it became apparent that the information listed on a printed catalogue card was neither desirable nor functional for LOLA. The search, sort and print requirements and capabilities set out in the various Statements of Work meant that a new form of catalogue entry had to be designed to standardize the records. The Project Manager wrote the cataloguing manual which was accepted for publication.<sup>3</sup>

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<sup>2</sup>DRES CR 22/90. Package Evaluation Report for Locating Library Articles LOLA Phase I. [I Cordes], SHL Systemhouse, Calgary, 1990, UNCLASSIFIED.

<sup>3</sup>SSP 141. LOCATING LIBRARY ARTICLES LOLA CATALOGUING MANUAL. J G Currie. 1991 UNCLASSIFIED.

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TABLE I

LOLA ENTRY POINT

TI	Title
SE	Series
GL	Geographic Location
CM	Abstract, Table of Contents
RN	Report Number
PY	Publication Year
ED	Edition
LC	Library of Congress Catalog Number
BN	International Standard Book/Serial Number
AN	DRES Accession Number
CN	Library of Congress Classification Number
DN	DSIS Accession Number
CR	DRES Contract Number
Type	Book, Document, Journal
LA	Language
FO	Format
SC	Security Classification
SS	Distribution Limitation
AU	Author, Editor
SU	Subject
CA/PU	Corporate Author/Publisher

The main reason for automating a library system is to improve the ability to match users to needed information. To do this all like items must be somehow linked. This was the original purpose behind the Dewey book classification system and all successive classification systems. This method of linking items is not the most efficient way to access a special collection although a system like this was in use at DRES from 1941 to 1967. This method is also very labour-intensive and time consuming. In an automated system the idea is to make the computer do the work of searching the catalogue. In the case of DRES this would entail reading approximately 50,000 catalogue cards. The work is not done by the user each time the catalogue is opened but it is done up front by the library staff who design standards of entry and the appropriate linkages. These are called authority files.

Authority files were designed for personal author, corporate author and subjects. Sometimes an author will change her name. In LOLA if you search M T Weiss you will also pick up the papers that she wrote as M T Birmingham. Sometimes a paper will use a

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variation of an author's name. This is particularly common in the case of journals, many of which have their preferred style. LOLA will link J G Clement with John G Clement and John Gilbert Clement, all of which were in the old card catalogue.

Corporate authors also undergo name changes. This is particularly common with government laboratories. In the 1980's the Chemical Research Development and Engineering Center at Aberdeen Proving Grounds, Maryland was also known as the Chemical Research and Development Center and the Chemical Systems Laboratory. It is also commonly known by the acronyms CRDEC, CRDC and CSL. LOLA links CRDEC with CRDC with CSL and with its previous names.

Terminology and word usage change over the years as well. Jargon or code words that were universally understood in the 1940's can be totally incomprehensible in the 1990's. If the phrase Mustard Gas is searched it will also retrieve those items entered under:

H  
H CAS 505-60-2  
HD  
HD CAS 505-60-2  
HS CAS 505-60-2  
Mustard  
Yperite  
Distilled Mustard

A simple command in the appropriate menu will allow for the addition of more terms, such as the proper name bis(2-chloroethyl)sulfide and the chemical formula.

The 8,000 documents that were to be catalogued had to be physically prepared for entry. This meant that the entries for the personal authors, corporate author and subjects had to be identified and listed in the standardized format for every document, both to allow for ease of retrieval from the system and so that the on-site contractor could easily enter the data into the system. DSIS had agreed to send DRES a tape containing their machine readable catalogue entry for all the documents that DRES could verify as being in both collections'. Only those documents received by DSIS after 1969 could be downloaded as that represented the limit of their automation. The only way that DSIS could prepare the tape was if DRES sent a list of DSIS Accession numbers. The Project Manager prepared a list of documents that had been published at DRES between 1969 and 1989 and then searched the microform copy of the DSIS catalogue to match the DSIS numbers to the list of documents. The list was subsequently transcribed and forwarded to Ottawa to have the tape produced. A special software

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function was inserted into the program by DSIS to remove all classified material from the records thus allowing SHL Systemhouse to dump the tape into the LOLA Master Bibliographic File. There were 1,431 records that were identified as being able to be transferred from DSIS. The Project Manager then had to review each of the remaining 6,500 documents and assign acceptable authority personal authors, corporate authors and subjects. This was akin to doing original cataloguing for all the documents. The importance of the authorities to the integrity and relevance of the system cannot be overstated. Terms and usage change and what was once understood to be common knowledge can now be a historical mystery. The example earlier in this section listing the 9 forms of entry for Mustard Gas verifies this. It is much easier for the user to enter one term than to try to compile a list of all possible terms.

Over 1,400 documents were entered into the database by the on-site contractor during the last two months of 1990.

WEEDING

The sheer amount of material stored at DRES has been mentioned earlier. There seems to have been no attempts in the past to systematically review the collection and remove material that was superseded or irrelevant. This was due partly to the lack of resources dedicated to this function, to the changing concept of the worth of information and partially to the fact that for many years it was not felt that the library actually needed a librarian on staff. The Project Manager had begun to weed the collection in 1985 on an as-and-when basis. The years 1969 to 1974 had been reviewed and some material weeded. The focus on collection development has changed since 1985. It was felt then that DRES should retain all documents published at the Chemical Defence Establishment Porton Down or the Chemical Research Development Engineering Center. However superseded science is superseded science no matter where it was produced. With this in mind every document was reviewed again.

The entire contents of the vault in Rm 302 and approximately one-half of the collection in Building 12 were reviewed for retention or disposal. As with many other of the CLIO tasks this required strict adherence to a number of policies and regulations; some designed for the CLIO project, some by DSIS and some by the DND Security Branch. The review was conducted according to the standards laid out in the DRES weeding policy, SSP 128.<sup>4</sup> Each item

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<sup>4</sup>SSP 128, Weeding Policy and Procedures. J G Currie & A M Dickason, 1989, UNCLASSIFIED.

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was looked at to see if it still met the needs of the research at DRES. If the item was not to be retained it was then necessary to decide if it was to be shipped to DSIS or if it could be destroyed. If it was to be destroyed it was necessary to determine if the DND Security Policy required special considerations before the item could be destroyed and if special considerations were required, say certificates for destruction had to be made up, witnessed and filed, then these conditions had to be met.

Over 51,000 individual documents were handled. A number of the documents were duplicates, however, so in total 37,189 different titles were reviewed. Of these 7,710 remained in the collection and 29,479 titles were weeded from the collection. There were 2,864 titles returned to DSIS and 40,703 titles and copies were destroyed according to DND Security policy. This is illustrated in Table 2.

TABLE 2  
DOCUMENTS REVIEWED

Titles Reviewed	37,189
Gross Documents Handled (Titles plus Copies)	51,277
Titles Retained	7,710
Titles Weeded	29,479
Titles to DSIS	2,864
Gross Documents Destroyed	40,703

At the end of 1990 over half of the material in Building 12 was still to be reviewed. Most of these items are the storage items referred to earlier and it is not expected that much will be retained.

REARRANGEMENT OF THE COLLECTION

Several factors influenced the rearrangement of the collection. The weeding of the material in the Main vault allowed for a more spacious distribution of the material. It also allowed for copies of all DRES corporate publications to be gathered together in one area. Several of these series had been in remote storage for many years. Two new journal reading/storage rooms were also constructed allowing for the journal collection to be removed

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from storage boxes and reshelfed. The "working collection", those journals that are currently being collected, were shelved in Rm 139 of the Central Laboratory. This area holds 306 journal titles and contains volumes from 1979 to the present. An outbuilding, Building 6, was allocated for the remote storage of the historic journal collection. This building was refurbished and the remaining journals that DRES decided to retain were shelved there. Included in this collection are such items as pre-1979 volumes of journals held Rm 139 and historic items, such as a set of the Journal of Physiology, 1878 to 1987. Over 300 journal runs were weeded from the collection in 1990 and sent to the Canadian Book Exchange in Ottawa. Catalogues for both the working collection<sup>5</sup> and the historic collection<sup>6</sup> were published.

#### RECLASSIFICATION

The term reclassification is not quite correct but it is convenient. Each DRES corporate document is to be reviewed for the following criteria:

- a. the overall security classification;
- b. the distribution limitation; and
- c. what, if any, action must be taken before the document can be released under Access To Information (ATI).

Contract W7702 8-1841/01-XSG was let to Dr R B Harvey to examine and recommend action on the DRES publications. The results were submitted in 11 volumes in 1989-90.

While Dr Harvey's recommendations are very helpful they must still be ratified by DRES. Each document is reviewed by the Project Manager who will consult with subject experts if necessary and then record a formal recommendation. If Access To Information is involved those passages not releasable and the appropriate clauses from the ATI legislation will be noted. The document will then be submitted to the DRES Document Review Panel for concurrence. If the classification is to be changed a "Document Review Panel Publication Record" sheet will have to be completed and sent to DSIS. It is the responsibility of DSIS to ensure that all recipients of the document are made aware of the change. At DRES all copies of the document must be stamped with the new

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<sup>5</sup>SSP 136 Periodical Catalogue 1990. A M Dickason, J G Currie, A Jones, 1990. UNCLASSIFIED.

<sup>6</sup>SSP 140 Periodical Catalogue to the Historical Journal Collection Held In Building 6. J G Currie, B Diakow, A Jones, 1990. UNCLASSIFIED



classification and the LOLA record must be amended.

In 1990 1,067 documents were reviewed for classification and 236 were reclassified.

#### CW HISTORY

A study was undertaken by the Research and Development Branch/Department of National Defence on the viability of gathering, storing and analyzing information concerning the Canadian chemical program from its inception to the present day. A decision was made to investigate the production of a history of the chemical program at DRES between 1941 and 1971. The Project Manager prepared a Statement of Work which was submitted to Supply and Services Canada. If it is decided to proceed with this history it will become part of the CLIO project.

#### PUBLICITY BROCHURE

The Chief of the Establishment reviewed the publicity material currently onhand at DRES. The Project Manager was requested to investigate producing a new publicity brochure that reflected a more current view of the DRES program. A Statement of Work was prepared and submitted to senior management for comment.

#### STAFF DUTIES

The Project Manager continued to act as Staff Officer/Information to DRES management. This included providing expert advice on Access To Information, Ministerial Inquiries and questions asked in the House of Commons; DND publishing and distribution procedures; the preparation of special bibliographies or publications lists both for international treaty organizations such as The Technical Cooperation Panel and for DRES management; and preparing planning or position papers on matters of information. The Project Manager also suggested areas of work and monitored the series of follow-on contracts that Dr Harvey was engaged in.

#### COLLABORATIVE WORK WITH ISG

The Project Manager worked closely with the new Head/Information Services Group not only to ensure the continuity of services but also to revitalize old procedures and to examine and institute new ones. The establishment of the two journal areas was a collaborative project. A revised guide to publication procedures

at DRES was also published<sup>7</sup>. Other collaborative work included assisting in the financial restructuring of the provision of information services and providing both theoretical and operational advice when required. Technical services, that is the cataloguing and processing of library material, has been transferred to the project. This will mean that between 1,000 and 1,500 new items will be entered into the catalogue each year by the on-site contractor. The integrity of the master bibliographic file can be better maintained during the critical start-up period this way with only two staff members actually entering data and creating authorities. It also frees the library staff for other duties.

#### COLLABORATIVE WORK WITH DSIS

The need for collaboration with DSIS has been mentioned throughout this paper. DSIS not only fulfils the archival role for document holdings but also has the longest history within CRAD of holding machine readable records. These records date from 1969. DSIS has agreed to provide a tape of records identified by DRES for downloading to LOLA. To aid in this and future cooperation the LOLA record was specifically designed to accommodate DSIS records. Examples of this include the form of entry for both the DRES accession number and the report number. DRES agreed to provide copies of LOLA so that DSIS could download records that they had not yet put into machine readable form.

#### FUTURE DEVELOPMENTS

Many aspects of CLIO are continuing. These include the catalogue conversion, the classification review, the weeding of Building 12, the collaboration with both ISG and DSIS, the history, publicity and Harvey contracts, and the provision of staff support to management.

The catalogue conversion alone requires the entry of over 5,000 documents already in the collection and the addition of over 1,000 new items each year. Approximately 20,000 books must be added to LOLA along with over 600 journal entries. It is estimated that this will take over two full years.

Verifying and maintaining the integrity of the system through authorities will also take considerable effort and time. Without the integrity provided by the logical links and automated see-also

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<sup>7</sup>SSP 132 Authors Guide to the Publishing Procedures at Defence Research Establishment Suffield. J G Currie & A M Dickason, 1990. UNCLASSIFIED.

references the system will be little more use than the old card catalogues.

It is hoped that LOLA Phase III, Circulation, will soon be approved. Circulation is an add-on module and will entail very little work on the part of DRES. It will, however, be a valuable tool as it will provide an on-line record of every item's actual location. It can also be adapted to provide a new document register as required by DND Security Orders.

The local area network for LOLA must be set up and all DRES users trained on the system. A search manual and training program must be developed.

A new Collection Development Policy must be designed to reflect the new DRES policy on document collection.

Two series of corporate documents, Field Experiments (FE) and Local Trials (LT) remain to be integrated into the collection.

A vast amount of material relating to DRES between 1941 and 1956 has been located at the Public Archives of Canada. DRES will investigate the utility of copying and integrating some or all of this material with the rest of the DRES collection.

#### CONCLUSION

Project CLIO achieved many milestones in 1990, the most visible being the weeding of the collection, the rearrangement of the facilities and the implementation of LOLA. Many less obvious milestones were also reached. It has also been gratifying that DRES management has showed the confidence in the project to assign more duties as the year progressed. While there was always a requirement for concentrated effort on the part of the Project Manager and his team the support of DRES management and staff, DSIS and the contractors all contributed to achieving the accomplishments listed in this paper. The second year of the project will require another type of meticulous concentration as the reclassification/ATI phase becomes more prominent and networking with DSIS should become a reality. The level of support mentioned earlier must be maintained in 1991 and future years for the project to come to complete fruition.

The Project, however, cannot be completed in the preliminary allocation of two years. I recommend that the project be extended from 1 Jan 1992 to 31 Dec 1993 and that contract W7702 90-0802 for conversion be extended for the same length of time.

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ANNEX A

SHL SYSTEMHOUSE REPORT ON IMPLEMENTATION

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**COMPLETION STATUS REPORT  
FOR  
LOCATING LIBRARY ARTICLES  
LOLA PHASE II  
DEFENCE RESEARCH ESTABLISHMENT SUFFIELD  
CONTRACT RMSO 660ER-8-0003/10-ER**

**PREPARED FOR:**

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November 12, 1990

COMPLETION STATUS REPORT

This report contains a list of all materials and services performed, in order to meet all the obligations of LOLA Phase II. (Contract # RMSO 660ER-8-0003/10-ER).

**1.0 HARDWARE**

The following hardware (LAN) was delivered to DRES, configured and tested:

- o Compaq 386/25e MHz fileserver with 300MB disk, 4MB RAM and VGA colour monitor.
- o 5 NI-5210 - Laticenet Untwisted PAR CARDS.
- o Wang TEK/150 tape backup with 12 3M 6525/287 MB tapes.
- o 3 Com 3 plus Ogen (Operating System).
- o 750W LAN Battery backup.

The LAN was originally set up with two terminals, tape backup and a laser printer using either link. Procedures were also setup to streamline logon and backup processes. The File Server has a 1 year on-site extended warranty.

**2.0 SOFTWARE**

Eloquent Library Software was implemented onto a LAN. The software package was customized to meet the requirements of the DRES Library standards in accordance with the layout in the LOLA cataloguing manual. The customized tables, screens and search capabilities were tested and reviewed, with the Library Staff at DRES.

**3.0 DOCUMENTATION**

User Manual, Training Manual and Cataloguing Manual were reviewed and left with DRES Library. System Documentation was reviewed and left with DRES IS Staff.

## LOLA PHASE II

DEFENCE RESEARCH ESTABLISHMENT, SUFFIELD

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### 4.0 TRAINING

All software options were reviewed and presented to DRES Library Staff.

- o Using the Training Package, Cataloguing Manual and User Documentation, the DRES Library Staff was trained to utilize the functions of the Library Package installed at DRES.

The preceding tasks were all completed at DRES and the Library Staff is currently using LOLA to input records to the system. Any follow-up training and support required will be performed under the Conversion Contract which is still in process.

Any questions concerning the above report should be forwarded to Irv Cordes at Systemhouse, Calgary, (403) 266-2266.

November 12, 1990

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ANNEX B

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Statement of Requirements for LOLA,  
DRES Libraries Master Bibliographic File  
and Catalogue

J.G. Currie and A.M. Dickason

OCT 89

Canada

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INTRODUCTION

The Information Services Group (ISG) at the Defence Research Establishment Suffield (DRES) has been investigating an integrated on-line inhouse library system for over 4 years. The system, known as LOLITA (Library OnLine Information Transfer and Access) has already gone through the stages of Statement of Requirements (SOR), Requests for Information (RFI), needs surveys, consultant visits, site visits and User Advisory Committees. DRES has also been in contact with Information Scientists and other professionals across North America. There is no need to expand on LOLITA as a whole because it is already well documented.

DRES is now at the state where it can begin to develop the Master Bibliographic File (MBF) and the first aspect of the system, LOLA the online catalogue. What follows is a Statement of Requirements for the MBF and LOLA.

Purpose of the Master Bibliographic File

The MBF is the keystone of the LOLITA project. The ability of LOLITA to perform all the required functions are in proportion to the completeness and adaptability of the MBF. In other words, it can be viewed as LOLITA's skeleton.

Purpose of LOLA

LOLA (LOCating Library Articles) is the Library Catalogue System. As the purpose of the automation project is to improve access to information held at DRES, LOLA must be capable of providing that information.

General Comments

Both the MBF and LOLA are unclassified. All data entered will be in accordance with the policies laid out in Suffield Special Publication 119, DRES LOLA Cataloguing Manual. It is anticipated that the card catalogues will be frozen (no new entries will be added) and converted (the catalogues will be retrospectively converted to the MBF).

General Systems Requirements

1. The system must be configured to expand.
2. The catalogue, circulation, acquisitions and other systems must be able to interface with each other.
3. The system must have the capability of interfacing with the DRES main computer to download MAG tapes.
4. The system must accept records or information downloaded from the DRES main computer.
5. LOLA shall be accessible through PACX or any other communications system set up at DRES.

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6. LOLA shall consist of three separate databases, LOLA 1 for monographs, LOLA 2 for journals and LOLA 3 for documents.
7. A search strategy shall be able to access all three databases through a single command.
8. LOLA will have three levels of display (see Db point #10).
9. Public access will be restricted to read/print only.
10. ISG shall be able to change or delete passwords or to change the functions authorized by passwords at will.
11. Transactions shall occur in real time.
12. No single command or action shall be able to destroy or delete the master bibliographic file. Delete commands will be limited to one record at a time.

Hardware Specifications

1. All hardware shall be unmodified, stocked items from a vendor's standard line.
2. All essential interfaces, including cabling and controllers shall be provided.
3. All hardware shall be configured to expand.
4. The CPU shall be dedicated to ISG.
5. The CPU shall be under the physical control of ISG.
6. The CPU shall be configured to expand in areas such as doubling the number of online users, doubling the size of the database as well as other functional capabilities.
7. The CPU shall be able to handle up to 5 tasks simultaneously.
8. The CPU may consist of a high speed PC with slaved external memory storage and a printer.
9. The external memory storage may be in one or more units. The preliminary storage area shall be 300 megabytes.
10. The memory storage shall be capable of accepting modular additions of up to double the original memory without re-programming.
11. The system shall have power failure protection for the equipment.
12. The printer, attached to the CPU shall be capable of high speed, not less than 480 characters per second, shall be form fed and capable of printing a variety of forms.
13. Data may be entered from either a keyboard or an optical character scanner or both.
14. The scanner shall be hand-held with a flexible cord of 42 inches or an unflexible cord of six feet.
15. The scanner shall be easily replaceable when improved models come on the market.
16. All communications shall maximize efficiency and effectiveness.
17. The hardware must provide a facility to perform backup (software included).

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Software Specifications

1. The software shall be written in a conventional programming language.
2. The software shall be used for all applications in the complete library system (LOLITA).
3. There shall be a real-time, multi-user operating system.
4. The operating system shall process jobs in accordance with established priorities and overlap jobs with no external intervention.
5. The system shall queue and dispatch operations while providing concurrent multi-task support.
6. The system shall include error handling routines that will allow one task to recover or terminate while other processing continues and ensure that operator intervention is minimal.
7. The system shall be able to handle a minimum of 5 tasks simultaneously with a response time of not more than 30 seconds.
8. The system shall protect data files or their ports with passwords and other security measures to ensure that there is no injury, deletion, editing or creation without proper authorization.

Database Specifications

1. The Master Bibliographic File and LOLA will contain only unclassified information.
2. LOLA, shall consist of three databases, LOLA 1 for monographs, LOLA 2 for journals and LOLA 3 for documents.
3. Search strategies shall be able to access all 3 databases through a single command.
4. Access shall be via password and the command: Begin LOLA X. Access to all 3 databases shall be through the command: Begin LOLA 1 2 3.
5. Programs shall be provided to perform back-up of all system data files onto a removable magnetic storage medium weekly.
6. All application and systems files shall be protected from unauthorized access by passwords and other security mechanisms.
7. ISG shall be able to change passwords or delete functions at will.
8. The record shall be constructed from a combination of the following tagged fields:

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<u>TAG</u>	<u>FIELD</u>	<u>Size</u>	<u>D/Base</u>
		<u>L</u>	<u>LOLA X</u>
AU	Personal Author	175	1,3
TI	Title	250	1,2,3
PU	Publisher	50	1,2
CA	Corporate Author	50	3
SE	Series/Journal Run	150	1,2
RN	Report Number	150	3
PY	Date	5	1,3
ED	Edition	15	1
GL	Place	25	1,3
PG	Pages	10	1,3
LA	Language	1	1,2,3
FO	Format	1	1,2,3
LC	LC Number	8	1
BN	ISBN/ISSN	10	1,2
AN	DRES Accession	7	1,3
CN	LC Classification	20	1
SU	Subject	250	1,3
DN	DSIS Number	8	3
CR	DRES Contract Number	10	3
SC	Security Classification	2	3
SS	Sensitivity	5	3
ST	Status	5	1,3
CL	Journal Location	15	2

9. DATA entry and retrieval shall be in accordance with SSP 119, DRES LOLA Cataloguing Manual.
10. LOLA will have 3 levels of display citation, catalogue and full. Citation shall include up to the following tags: AU, TI, PU, or CA, SE or RN, PY, ED, AN, CN, CR and SC. The Catalogue level of display shall include the citation plus SU, GL AND ST. The full record shall be able to include all tags in the MBF.
11. LOLA will be accessible through 3 passwords. The first will be for public access to the catalogue. It will allow the user a read/print capability only. The second password will be confined to library staff. It will allow read/print and enter/edit. The third password, also for library staff, will allow all other tasks plus delete.
12. The delete command shall be confined to one record at a time.
13. The following tags shall be searchable: AU, TI, PU, CA, SE, RN, LC, BN, AN, CN, SU, DN and CR. The default shall be title and subject fields.
14. Stop words shall be: and, an, by, for, from, of, the, to, and with.

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15. Search commands shall be in the form of "S AU=XXX".
16. The system shall show a summary whenever a search retrieves one or more hits. The summaries will be consecutively numbered in connection with the search command, i.e.:  
S CA=DRES S1 572 CA=DRES.
17. The hits will be in numerical order by AN with the highest number (the most recent) being first.
18. The system shall allow use of the explicit boolean connectors "and" and "or" for single terms, connected terms and sets (i.e. S6).
19. The system shall accept connected terms using the connector "()", i.e. S SU=Yellow()Fever.
20. A search term may be truncated by the use of a "?" i.e. S SU=Anesthe?
21. The system shall allow browsing by allowing the searcher to enter a single term or connected terms and have the screen display the entries in its alphabetic neighbourhood. The neighbourhood shall consist of the preceding 5 terms and the 10 following terms. The command shall be expand or E and a tag, AU, SU, etc must be used.
22. The system shall ignore variations in punctuations, spacing, upper/lower case lettering and other special characteristics.
23. The system will have a break key or command to allow users to interrupt searches.
24. The system shall allow for printouts of a search providing that the requesting terminal is attached to a printer. There is no off-line printing. The print command shall be Print or P.
- 25.. ISG shall be able to specify the limit of citations printed for searches in general.
26. The system shall have easy to follow prompts throughout the process.
27. The system shall provide a means by which users may ask for help from the system at any time during the search.
28. Up to 3 terminals may use the public password simultaneously with ISG using its two passwords without loss of response time.
29. On-line editing of all fields in a record shall be 30 possible.
30. The editing and modification of a tag shall be possible 31 without re-typing the entire line or tag.

#### Performance Testing

The DRES Computer Group shall be responsible for testing a model of the system. It shall include no less than 250 records. The Computer Group will verify that the system can:

1. Enter, retrieve edit and delete data.
2. Perform simple and complicated searches.
3. Be accessed from remote terminals.

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4. Display and print search results.
5. Print an accession list.
6. Handle up to 5 jobs at one time.

The testing will be monitored by ISG.

#### Training

The contractor shall train the ISG staff in day-to-day operations of the systems.

The contractor shall ensure that easy to follow prompts and a HELP routine are built into LOLA for use by the public access terminals.

The contractor shall provide ISG with 2 tutorial packages; one for using the public access terminals and one detailing the entire system for ISG staff.

#### Documentation

Two complete sets of descriptive and operational manuals for the systems shall be provided.

If verbalization is required for the software then two dictionaries or glossaries shall be provided. These should also be included in the training package.

#### Maintenance

All hardware or software must be easily maintained and protected against accidental destruction, either in part or in whole.

A member of the Computer Group shall be indentified as the system expert and shall be readily available to work with ISG when problems arise.

#### Start-Up

The projected start-up is 01 May 1990.

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ANNEX C  
SELECTION CRITERIA

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DEFENCE RESEARCH ESTABLISHMENT SUFFIELD

RALSTON ALBERTA

SELECTION CRITERIA FOR LOLA  
(LOCATING LIBRARY ARTICLES)

J G CURRIE, A M DICKASON, J HODGES, I CORDES'

MARCH 1990

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SHL SYSTEMSHOUSE LTD, CALGARY

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LOLA is the Master Bibliographic File and online catalogue for the DRES Libraries' automated system, LOLITA. By 1 March 1990 the developmental phase of the project had progressed to the point where selection criteria for the evaluation of packages could be developed. These criteria and weighted scores were developed by consensus. The make-up of the team was:

J G Currie	Project Manager
A M Dickason	Head/Info Services, DRES
J Hodges	Analyst, Computer Gp, DRES
I Cordes	SHL Systemhouse, Calgary

Vendors will be graded against the criteria. Weights have been assigned to the criteria, 10 for most important, 7 for important, 5 for least important and 3 for pure options. Several criteria, notably in the hardware, performance and search areas, are rated as PASS/FAIL (P/F). The PASS/FAIL criteria are mandatory, a single fail will remove a vendor from consideration.

CRITERIAWEIGHTUser Friendliness

Menu Driven Windows	PASS/FAIL ____/5
Wording - self documenting command template or equivalent prompts	____/10 ____/7 ____/10
Help - On-line tutorial	____/10 ____/7
Confirmation of Delete	____/10
TOTAL SCORE	____/59
WEIGHTED SCORE ( X10 )	____/590

FLEXIBILITY

## Tables

access via passwords	____/10
codes	____/7
authorities	____/5
thesaurus/cross references	____/7
edit	____/10
other	____/5

TOTAL SCORE	____/44
WEIGHTED SCORE ( X10 )	____/440

ERROR HANDLING

## Messages

self documenting	____/10
corrective action required	____/10

## Cancelling

break key - does not destroy strategy	____/10
---------------------------------------	---------

Software to Handle Error Without Aborting	____/10
---	---------

TOTAL SCORE	____/40
WEIGHTED SCORE ( X10 )	____/400

PROCESSING

Documents, Journals, and Books	PASS/FAIL
--------------------------------	-----------

Default to Search All Three Files	____/10
-----------------------------------	---------

Backup Capability	PASS/FAIL
-------------------	-----------

Scanner	____/5
---------	--------

Specify Output - Level of Display	____/10
-----------------------------------	---------

Specify Search Limitations	____/10
----------------------------	---------

Browsing	____/7
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Provide Summaries	____/10
Provide Statistics	____/3
Sort	____/10
TOTAL SCORE	____/65
WEIGHTED SCORE ( X10 )	____/650

PERFORMANCE

Conventional Programming Language	PASS/FAIL
Real-time	PASS/FAIL
Multi-user	PASS/FAIL
Concurrent Multi-tasks	PASS/FAIL
Variable Record Lengths, Does Not Store Blanks or Unused Fields	____/7
On-Line Editing	PASS/FAIL
Speed	____/5
TOTAL SCORE	____/12
WEIGHTED SCORE ( X10 )	____/120

HARDWARE

All Hardware Must Be Unmodified Stocked Items	PASS/FAIL
All Hardware Must Be Modular	PASS/FAIL
Power Failure Protection	PASS/FAIL

SEARCH CAPABILITIES

Specify Search Tags	PASS/FAIL
Defaults	____/ 10
Ignore Punctuation	____/ 10
Ignore Special Characters	____/ 10

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Accept Connectors and Proximity Connectors	PASS/FAIL
Accept Stopwords	____/ 10
Specify Record Type (Doc, Book, Periodical) Default is All Three LOLA Files	PASS/FAIL
TOTAL SCORE	____/ 40
WEIGHTED SCORE	____/ 400

OUTPUT

Multiple Access Via Search Tag	PASS/FAIL
Audit File For Changes to Key Tables	____/ 10
Sort Flexibility - See Search Tags	
Ordering and Level of Citations - see also Sort and Level of Display	____/ 10
TOTAL SCORE	____/ 20
WEIGHTED SCORE ( X10 )	____/ 200

INTERFACES

Must Interface With All Future LOLITA Applications	PASS/FAIL
All Constraints MUST be Documented DURING System Evaluation	____/ 10
All Limitations MUST be Documented DURING System Evaluation	____/ 10
TOTAL SCORE	____/ 20
WEIGHTED SCORE	____/ 200

SUPPORT

Hotline Service	____/ 10
Software Update Policy	____/ 7
Vendor Credibility	____/ 10
Service Contract	____/ 3

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Software Ownership, Licensing	____/	10
Training Package	____/	10
Manuals	____/	10
Documentation	____/	10
Performance Testing	____/	10
Trial Period	____/	3
TOTAL SCORE	____/	83
WEIGHTED SCORE	____/	830

A number of library packages have been identified as being of interest to DRES. The vendors will be invited to detail their packages which will be evaluated against the criteria. Those packages which score highest will move to the final selection process.

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## ANNEX D

## PUBLICATIONS

SSP 140 Periodical Catalogue to the Historical Journal Collection Held In Building 6. J G Currie, B Diakow, A Jones, 1990, UNCLASSIFIED.

SSP 136 Periodical Catalogue 1990. A M Dickason, J G Currie, A Jones, 1990, UNCLASSIFIED.

SSP 132 Authors Guide to the Publishing Procedures at Defence Research Establishment Suffield. J G Currie & A M Dickason, 1990, UNCLASSIFIED.

CR 22-90 Package Evaluation Report for Locating Library Articles: LOLA. SHL Systemhouse, 1990, UNCLASSIFIED.

CR 9-90 Review of Classification of DRES Publications (1941-1988). Suffield Reports. R B Harvey. 1989. UNCLASSIFIED.

CR 2-90 Review of Classification of DRES Publications (1941-1988). Trial Records. R B Harvey, 1989, UNCLASSIFIED.

CR 58-90 Review of Classification of DRES Publications (1941-1988). Suffield Special Publications, Suffield Miscellaneous Publications. R B Harvey, 1989, UNCLASSIFIED.

CR 57-89 Review of Classification of DRES Publications (1941-1988). Local Trials. R B Harvey. 1989. UNCLASSIFIED.

CR 53-89 Review of Classification of DRES Publications (1941-1988) Field Experiments. R B Harvey, 1989. UNCLASSIFIED.

CR 50-89 Review of Classification of DRES Publications (1941-1988) Suffield Memoranda, Pt III. R B Harvey, 1989, UNCLASSIFIED.

CR 49-89 Review of Classification of DRES Publications (1941-1988) Field Reports. R B Harvey. 1989. UNCLASSIFIED.

CR 48-89 Review of Classification of DRES Publications (1941-1988) Suffield Memoranda, Pt II. R B Harvey, 1989. UNCLASSIFIED.

CR 34-89 Review of Classification of DRES Publications (1941-1988) Suffield Technical Papers. R B Harvey, 1989. UNCLASSIFIED

CR 33-89 Review of Classification of DRES Publications (1941-1988)

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Suffield Memoranda, Pt I. R B Harvey, 1989. UNCLASSIFIED.

CR 32-89 Review of Classification of DRES Publications (1941-1988)  
Suffield Technical Notes. R B Harvey, 1989. UNCLASSIFIED.

CR 11-90 Retention Or Disposal of Unused and Dead Files.  
R B Harvey, 1990. UNCLASSIFIED.

CR 16-90 Retention Or Disposal of Unused and Dead Files (Technical  
Files). R B Harvey, 1990, UNCLASSIFIED.

CR 12-90 Field Trials With Human Observers (Mustard Gas). R B  
Harvey. 1990, UNCLASSIFIED.

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DRE Suffield		Unclassified	
3. TITLE (the complete document title as indicated on the title page. Its classification should be indicated by the appropriate abbreviation (S,C,R or U) in parentheses after the title.)			
Automating a Government Research Library: The First Year's Progress Report on the Defence Research Establishment Suffield's PROJECT CLIO			
4. AUTHORS (last name, first name, middle initial. If military, show rank, e.g. Doe, Maj. John E.)			
Currie, J G			
5. DATE OF PUBLICATION (month and year of publication of document)	6a. NO. OF PAGES (total containing information. Include Annexes, Appendices, etc.)	6b. NO. OF REFS (total cited in document)	
May 1991		7 & 18	
6. DESCRIPTIVE NOTES (the category of the document, e.g. technical report, technical note or memorandum. If appropriate, enter the type of report, e.g. interim, progress, summary, annual or final. Give the inclusive dates when a specific reporting period is covered.)			
Special Publication			
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- 13 ABSTRACT (a brief and factual summary of the document. It may also appear elsewhere in the body of the document itself. It is highly desirable that the abstract of classified documents be unclassified. Each paragraph of the abstract shall begin with an indication of the security classification of the information in the paragraph (unless the document itself is unclassified) represented as (S), (C), (R), or (U). It is not necessary to include here abstracts in both official languages unless the text is bilingual).

ABSTRACT

PROJECT CLIO is a special project at the Defence Research Establishment Suffield (DRES). The four original objectives of the project were: To automate the DRES library collection of books, documents and journals; To conduct a security classification/Access to Information (ATI) review of all documents published at DRES since 1941; To weed the document collection and to redesign and rearrange library facilities; and to provide staff support and expert advice to DRES management on matters of information security and dissemination, ATI, and theoretical and operational aspects of information science. Duties added to the project during the first year included the CW History project and a revised publicity brochure. This paper reports the accomplishments of 1990 and describes the actions taken to achieve specific goals. Included as annexes are three of the automation planning papers.

- 14 KEYWORDS, DESCRIPTORS or IDENTIFIERS (technically meaningful terms or short phrases that characterize a document and could be helpful in cataloguing the document. They should be selected so that no security classification is required. Identifiers, such as equipment, site designation, trade name, military project code name, geographic location may also be included if possible keywords should be selected from a published thesaurus, e.g. Thesaurus of Engineering and Scientific Terms (TEST) and that thesaurus-identified. If it is not possible to select indexing terms which are unclassified, the classification of each should be indicated as with the title.)

Information Science  
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Collection Development  
Weeding  
Documents  
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